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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/643,017	08/21/2000	Jes Thyssen	50944.8500/99RSS219	8562

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EXAMINER	
AZAD, ABUL K	

ART UNIT	PAPER NUMBER
2654	14

DATE MAILED: 03/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/643,017	THYSSEN, JES	
	Examiner	Art Unit	
	ABUL K. AZAD	2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *8,11,20,22 and 24-47* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *8,11,20,22 and 24-47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This action is in response to the communication filed on December 13, 2003.

2. Claims 8, 11, 20, 22 and 24-47 are pending in this action.

3. The applicant's arguments with respect to claims 8, 11, 20, 22 and 24-47 have been fully considered but they are not deemed to be persuasive. For examiner's response to the applicant's arguments or comments, see the detailed discussion in the Response to the Arguments section.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 8, 11, 20, 22, 24-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gersho et al. (US 6,233,550) in view of Ertem et al. (US 6,453,289).

As per claim 8, Gersho teaches, "a method for classifying a speech signal, the method comprising the steps of:"

"extracting a parameter from the speech signal" (Fig. 4A, element 14, parameter is extracted by LP analysis);

"comparing the noise-free parameter with a pre-determined threshold" (col. 19, lines 24-36);

"associating the speech signal with a class in response to the comparing step" (col. 19, lines 24-36).

Gersho does not explicitly teach, "estimating a noise parameter and removing the noise component from the parameter to generate a noise-free parameter". However, Ertem teaches, "estimating a noise parameter and removing the noise component from the parameter to generate a noise-free parameter" (col. 3, lines 28-49, reads on "noise reduction algorithm can be implemented in a pre-compression mode . . ."). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to remove background noise in a pre-compression mode as taught by Ertem in the invention of Gersho because Eatern teaches reduction of background noise levels can mitigate several problems and enhance over all performance of the speech communication system (col. 1, lines 12-20).

As per claim 11, Gersho teaches, "wherein a plurality of parameters are extracted to classify the speech" (col. 19, lines 24-36, here plurality of parameters are spectral tilt, rate of zero-crossing, energy and residual peakiness etc.).

As per claim 24, Gersho teaches, "wherein the plurality of parameters include a spectral tilt parameter, a pitch correlation parameter and absolute maximum parameter" (col. 19, lines 24-36).

As per claims 25, 27 and 28, Gersho does not explicitly teach:

"wherein the removing step removes the noise component from each of the plurality of parameters to generate a plurality noise-free parameters";

"wherein the step of removing the noise component includes applying weighting to the parameter";

"wherein weighting the parameter includes subtracting a background noise contribution".

However, Ertem teaches:

"wherein the removing step removes the noise component from each of the plurality of parameters to generate a plurality noise-free parameters" (col. 4, lines 36-64);

"wherein the step of removing the noise component includes applying weighting to the parameter" (col. 7, lines 1-20);

"wherein weighting the parameter includes subtracting a background noise contribution" (col. 8, lines 25-43).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to remove background noise in a pre-compression mode as taught by Ertem in the invention of Gersho because Eatern teaches reduction of background noise levels can mitigate several problems and enhance over all performance of the speech communication system (col. 1, lines 12-20).

As per claim 26, Gersho teaches, "wherein the comparing step compares each of plurality of noise-free parameters with each of a plurality of a corresponding pre-determined threshold" (col. 18, line 59 to col. 19, line 14, the classification data is trained manually before the testing).

As per claim 29, Gersho teaches, "wherein the threshod is unaffected by the background noise contribution" (col. 18, line 59 to col. 19, line 14, the classification data is trained manually before the testing, therefore threshold is unaffected by the background noise).

As pre claims 20, 22, 30-47, they are interpreted and thus rejected for the same reasons set forth in the rejection of claims 8, 11 and 24-29.

Response to Arguments

6. The applicant argues, "Ertem '289 carries out noise reduction prior to encoding or compression. In sum Ertem '289 is simply directed to noise reduction, not speech classification. Thus combining the disclosures of Ertem '289 and Gersho '550 results in employing the noise reduction technique of Ertem '289 prior to the speech coding technique disclosed in Gersho '550. as explained above, such an approach is a significant departure from the method specified by the claim 8, and results in significantly increased complexity and high power and memory consumption" and "moreover, applicant notes that Ertem '289 discloses a voice activity detection scheme employing threshold adaptation . . . the combined disclosures of Gersho '550 and Ertem '289 fails to disclose, teach or suggest the method specified by claim 8".

In response to applicant's argument that Ertem '289 is simply directed to noise reduction, not speech classification, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary

reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

In response to applicant argument that combined references do not solve significantly increased complexity and high power and memory consumption, the examiner point out a case law:

In re Gershon, Goldberg, and Neidith, 152 USPQ 602 (CCPA 1967) "Although references do not disclose or suggest the existence of applicant's problem or its cause, claims are rejected under 35 U.S.C. 103 since references suggest a solution to problem; it is sufficient that references suggest doing what applicants did, although they do not teach or suggest exactly why this should be done, other than to obtain the expected superior beneficial results".

In response to applicant's arguments, the examiner notes that the claim does not recite any particular way removing the noise parameter. The claims recite estimating the noise component and removing the noise component, do not recite any particular way to estimate noise and remove noise component, which over come the references teaching. Here, Ertem teaches different type of voice activity detection one of them is threshold adaptation as indicated by applicant, another type is describe at Fig. 6, do not need threshold adaptation. Here, Ertem does not use to show for speech classification, Ertem solve a particular problem of estimating noise component and removing the noise

component and generating a noise free parameter to use in an encoder, Gersho use to show speech classification and encoding.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Abul K. Azad** whose telephone number is **(703) 305-3838.**

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richemond Dorvil**, can be reached at **(703) 305-9645.**

Any response to this action should be mailed to:

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Or faxed to:

(703) 872-9314

(For informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center's Customer Service Office at telephone number **(703) 306-0377.**

Abul K. Azad

February 26, 2004